Synopsis

On

Determinants of Capital Structure of Start-ups: An Empirical Study on Delhi-NCR

For Registration

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PROPOSED TOPIC OF RESEARCH:

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1. Introduction

Start-ups are the small entities that play a quite important and significant role in economic growth of a country. They contribute to a country's economy in various ways like by generating employment, encourage creativity and innovation, improve GDP, increase output and income, improve standard of living ,increasing export ,wealth creation and in many more ways, and all these leads to a more improved economy and boost progress and development of an economy. Start-ups are the engines of economic growth (Deloof and Vanacker, 2018) As per Kauffman foundation it was reported that it would not be possible to maintain job growth rate in the United States without young ventures. Start-up India Stand-up India is one of the initiatives undertaken by the Indian government to promote entrepreneurship in the country and also created the fund of funds for start-ups with amount of 10,000 crore for providing funds to the promising start-ups. Our Prime Minister has also highlighted that the start-ups will be having a big crucial role in ensuring the realization of the goal of becoming a 5 trillion economy (The Indian Express, 2019).

To achieve the tremendous growth, and to run the start-ups activities successfully, they need the infusion of capital timely for their proper growth and development. Financial capital is one of the necessary resource which is required for the firms to establish it and for their subsequential operations (Cassar, 2004). Start-ups can raise finance by the help of various types of instruments to finance their activities and the combination of these sources of finance is usually referred to capital structure (Myers, 2001). The capital structure of a firm means the way through which a firm finances its business activities and operations. It usually consists of debt and equity. The decision to finance by either debt or equity depends on various factors. The capital decisions and the use of debt and equity at start-up had an

important implication for the business activities, failure risk, and firm performance and for the future business expansion (Cassar, 2004).

There are various sources of finance available to the start-ups in the form of debt (loan from friends and family, loan from bank or other financial companies, through govt. schemes etc.) and equity(entrepreneur own savings, friends and relatives , venture capital ,angel investors etc.). However, the start-up entrepreneurs face problems in acquiring required amount of finance during its various phases of development. The previous literature has also shown that newly founded firm face significant financial constraints at start-up stage that may lead to their failure (Huyghebaert, 2003).The issue of finance has been recognized as an immediate reason for business being failed to start or progress in developing countries (Abor, 2008). India has the third largest start-up ecosystem in the world (NASSCOM 2019), yet it's a harsh reality that 90% start-ups fail within 5 years of their foundation. A number of reasons are there, but lack of funding is one of the key reasons why start-ups fail. Due to small businesses unique characteristics from that of listed publicly traded firms, their source of fund utilized differs (Ang, 1991).

Various aspects of start-ups financing are unique as compared to the larger and established firm. In the initial years of their operation, they introduce the new products with a very little proven know-how (Ortqvist et al., 2006) they do not have any financial or operating history and so means no credible reputation and also having a high failure risk (Berger and Udell 1998, Cassar 2004, Huyghebaert and Van De Gucht 2007). So, initially they could use finance through their personal sources that mostly consist of insiders, i.e. entrepreneur himself, financed from entrepreneurial team, credit cards etc. (Gartner et al. 2012) and later on the start-ups raise financing through external sources. It has been also seen that owner finance the activities through bootstrapping is a strategic choice not necessity (Waleczek et al., 2018). The personal capital is the main source of financing, when it got exhausted then firm use bank debt and thereafter private equity. The credit market is imperfect and there exist a financing hierarchy (Colombo and Grilli, 2007). Due to asymmetric information problem and transaction cost involved in raising funds the new ventures firstly tend to use internally generated funds and when they got exhausted they look at debt source , and external equity will be used as a last resort only.

Financing decision is one of the most significant decisions taken by any firm. Various studies relating to the financing decision of start-ups in developed countries have been undertaken like (Cassar 2004, Robb and Robinson 2014). There is a need to analyse the financing decision of start-ups in developing country like India. It is important to understand about

how Indian start-up firms finance their activities. It will be important to know whether they rely more on debt or equity. As in case of US firms they relied more on external debt sources (Robb and Robinson, 2014). Start-ups were found to be highly levered (Huyghebaert and Van De Gucht, 2007). The capital structure decision of start-up firms is important to analyse as it will have an impact on their future growth and development as well.

2. Review of literature

The various researchers have made contribution towards the literature of capital structure decision of firms in the world. Numerous studies have been conducted in this area. Some of relevant articles related to this literature are discussed below:

Titman and Wessels (1988) determined the determinants of capital structure using 469 manufacturing firms for which data taken from Annual Compustat Industrial files (1974-1982). The factors like growth, non-debt tax shield, earning volatility and asset structure were not found to be related to debt ratios but the uniqueness and profitability were found to be negatively related to debt ratios. It was also found that smaller firms used short term debt more significantly than the larger firms.

Rajan and Zingales (1995) studied about the financing decision of nonfinancial public firms of major industrialized countries (G-7) by analysing international data, Global Vantage (1987-1991). The findings showed that the factors found to be related with leverage were tangibility of asset, market to book ratio, firm size, and profitability. The differences in institutions also have some explanatory power in explaining differences in the aggregate capital structure the firms in Germany and UK were found to be having lower leverage than other five countries. The external financing was smaller than internal financing for US UK Canada firms, whereas Japan firms financed more through external sources.

Cressy (1996) examined the correlation between survival and financial capital, survival and human capital and tested whether both financial and human capital explained the survival of start-up and was there any credit rationing of start-ups. By using sample of 2,000 UK start-ups from UK bank database. The results indicated that there was spurious correlation between survival and financial variables and survival was explained largely by variable of human capital. The owner age and team size were found to be the dominant variables of human capital. The decisions related to the provision of finance was found to be demand-driven i.e. start-ups self-select for bank finance based on the human capital possessed by them and firms with greater human capital more likely to use the funds, therefore there was no credit rationing of start-up.

Berger and Udell (1998) looked at sources of finance for small businesses, studied their interrelatedness and the financial growth cycle, impact of macro environment and how capital structure varied with the firm size and age. By using data from 1993 National Survey on Small Business Finance (NSSBF). Funding sources were divided into four categories of equity and nine categories of debt. The findings suggested that principal owner, commercial bank and trade creditors, these three constituted the largest source of finance (70% of total funding) and even they were largest for every size and age group of firm although larger firm used more proportion of debt than smaller firms. As firm moved, from early to late stage the financial needs and choices get changed over time due to more growth, more experience and becoming less informationally opaque i.e. different capital structure would be optimal at different point in growth cycle although, model might not fit to all small businesses.

Verheul and Thurik (2001) studied whether gender had an impact on the size and composition of financial capital used by start-ups using multiple regression analysis on 2000 Dutch start-up entrepreneurs. The female entrepreneur acquired smaller amount of capital than male but the composition of debt and equity capital was found to be the same as like in male entrepreneur's businesses. Although they differ significantly regarding the type of capital used.

Cassar and Holmes (2003) explored the determinants of capital structure and use of financing by SME's by using OLS regression on data of a large Australian nationwide panel survey (1994-1998).The asset structure, profitability and growth were found to be important determinant of capital structure. The firm size, asset structure, growth were positively related to leverage while profitability, risk was negatively related to leverage the finding also highlighted the importance of short term debt over long term debt in SME financing the findings supported the static trade off and pecking order theory.

Astebro and Bernhardt (2003) studied about the relationship between survival of new small businesses (start-ups) and bank loans. The data collected from CBO database (1987-1991). Three predictors of survival used were, first whether the business had a bank loan or other loan (include loan from friends, family, former owner etc.), second human capital proxies, third industry and company characteristics. The probit regression model was used .The findings suggest that there was negative relation between bank loan and business survival while positive relation was found between having a non-bank loan and survival. However, business survival conditionally based on owner human capital, loan sources, wealth, industry and company characteristics had showed in fact, that bank loan, with other condition being same, was significant positive indicator of start-up survival.

Cassar (2004) explored the determinants of capital structure, types of financing and magnitude of finance used by business start-ups by using a sample of 292 Australian start-ups taken from Business Longitudinal Survey (1996-1998) .The methodology used were Tobit regression, Logit and OLS regression. The four variables used to study capital structure measures were: leverage, long term leverage, outside financing and bank financing. The findings suggested that larger firm more likely used bank or other external financing. Asset structure also significantly influence start-up financing where leverage and outside financing being positively related to proportion of non-current assets while long term leverage and bank financing found to be negatively related. Legal organization and intention to grow have little effect on debt use and having a positive influence on use of bank financing. It was found that characteristics of entrepreneur didn't affect the capital structure choice if once the firm characteristics were considered.

Abor (2005) examined the relationship between capital structure and profitability of listed firms on Ghana stock exchange (1998-2002) using OLS regression. The findings had shown that significantly positive relation between the short term debt and profitability and a negative relation found between long term debt and profitability .There was also a significantly positive relation found between total debt ratio and profitability. The profitable firms depend more on debt as their main financing option. The firms were found to be financially leveraged with a large proportion (85%) of total debt being short term.

Ortqvist *et al.* (2006) explored the determinants of capital structure in successful registered new ventures of Sweden for which the data was sourced from Affarsdata (2000-2004). The independent variables profitability, growth, asset structure, size, age were taken as a determinant of capital structure. The dependent variables being short term debt (STD) and long term debt (LTD). The asset structure was found as the only variable having significant relation with both STD and LTD and most other variables had not revealed any significant relation to short and long term debt.

Huyghebaert *et al.* (2007) analyzed the choice made by business start-ups between bank debt and trade credit by using data on 325 Belgian entrepreneurial start-ups. It focused on demand side .i.e. from entrepreneur point of view. The Debt mix of firm got influenced by three factors-failure risk, entrepreneur private benefit of control rights and liquidation value. The findings suggest that firms in industries with high historical start-up failure rate and entrepreneurs that highly value private benefits of control use less bank debt and these effect get even more stronger if firm had higher liquidation value. Therefore, entrepreneurs trade

off the lower cost of bank debt against the more lenient liquidation policy of suppliers when determining their debt mix.

Colombo and Grilli (2007) studied about financing of new technology based firms and analyzed characteristics that influence bank credit by using 386 Italian new tech based firms from RITA database. Double Censored Tobit and Bivariate Tobit models were used. Three sources of financing considered – founder's personal capital, outside equity and bank debt. The level of financial leverage get decreased if there exist a greater amount of personal wealth while increase with the amount of total initial capital and start-up size. The average amount of bank debt obtained was less than half the mean amount of personal capital and approx. six time smaller than the mean amount of private equity.

Huyghebaert and Van De Gucht (2007) investigated the initial financial structure of 244 manufacturing start-ups of Belgium. The three components of Start-up's debt structure were studied with the help of cross sectional regression analysis -debt ratio, proportion of debt that is bank debt and the maturity structure of bank debt. Start-ups were found to be highly levered as 76% of initial finance raised through external debt, 44% of total debt was bank debt and 28% in the form of trade credit. Adverse selection and Risk shifting showed a significantly negative impact on debt mix however didn't affect the maturity structure of bank loan whereas growth opportunities was significantly positively related to debt mix, in spite of they took less debt and if needed raised more of bank debt.

Abor (2008) compared the capital structure of publicly listed, large unlisted and SME's of Ghana and also identified the determinants of capital structure decision among them (1998-2003). The listed, large unlisted were found to be having significantly higher debt ratios than SME's. The short term debt proportion was relatively higher out of total debt. The age, size, asset structure, profitability, risk and managerial ownership were found as important determinant of capital structure.

Coleman (2008) analyzed the race effect that is how black owned firms acquired the sources of external capital and tested the relationship between the probability of having a loan and firm and owner characteristics using logistic regression model on the data of small US firms taken from the 2003 survey of Small Business Finances. The black owned firm had less access to debt sources, even after controlling the firm and owner characteristics. The firm more probably refused for loan and they apply less significantly due to the assumption that they will be denied.

Cosh *et al.*(2009) Explained the characteristics of firms that seek external finance, then what propel them to appeal for external finance, the factors that lead to appeal's rejection or

acceptance for outside finance, did firm's abilities differ for getting finance, can firms obtain all of their desired capital in the form they would like to get. The early stage privately held UK firms were taken and probit model, two step Hackman regression were used. Firms having growth objectives, small growth oriented firm, lower revenue, higher capital expenditures /profits would seek for external finance. Differences in firm-specific and market factors propelled firms to apply for external finance. The findings supported the pecking order theory, firms looking for financial capital were able to secure their needed finance from at least one of the different sources. Although, external finance is often not available in the form that a firm would like to get.

Au and Kwan (2009) studied about the financing choices for formation of initial capital structure of Chinese start-ups by using survey conducted in Hong Kong and in People's Republic of China. Strong familism induced Chinese entrepreneurs for considering family as an important source of finance. In contrast, It was also founded that family funding was not the major source of capital under certain conditions .i.e. like if more family control and interference exist, lack of personal autonomy in developing their business, more family pressure that would might discourage Chinese entrepreneurs to get funds from family and so then they would more likely to approach funding from friends as an alternative or even a substitute to family capital.

Vanacker and Manigart (2010) investigated the incremental financing decision taken by high growth companies over a period of 8 years (1997-2004) using financial statement data of Belgian companies from Bel-first database. The logistic regression models was used for analysis. The findings suggest that more profitable companies, having low debt ratios, positive stockholders' equity and higher cash flow preferred to utilize internal financing through the help of retained earning although they have a higher debt capacity whereas companies with high risk, more tangible assets, investment in intangible assets more probably resort to outside finance and companies which are less profitable , with more leverage level, low cash flow ratios, negative stockholder equity , with high risk of failure, and those who had more heavily invested in intangible assets were more likely to resort to external equity.

Sanyal and Mann (2010) analyzed relation between financial structure of start-up and characteristics of its assets, information and entrepreneurs at the time of inception by using Kauffman firm survey. To study the relationships, the multi-nominal logit method was used. Financial choices were divided as internal equity, internal debt, external equity and external debt. The findings had shown that Nearly about 26% firms used internal equity as their

primary source, about 3% used internal debt, about 70% used external debt (composed of 58 % credit card debt, 5.6% bank debt, rest of include govt. loan or other source) and about 1.4 % used external equity in initial years of start-up. Start-up firm with more asset specificity primarily financed by internal funds followed by external equity and lastly by external debt whereas firm with more information opacity used higher proportion of internal finance, followed by external debt and at last external equity. More educated, older one used debt financing while African American entrepreneur used internal sources in their financial structure, women owned start-up didn't differ from that of male. Financial structure of hi-tech start-up also differ from that of other start-ups.

Nofsinger and Wang (2011) studied the factors that determine the financing source for initial start-up financing of 1869 initial start-ups in 27 countries using GEM data and also examined how the institutional and informal investors react to the three signals that were: product type, production technology and entrepreneurial experience using Tobit and Logit regression. The institutional investors relied on start-up producing existing product and experience of entrepreneurs matters a lot for them whereas the informal investors relied on start-ups that were involved in producing new product, and on social relationship they have with the entrepreneur through which they were able to get information about his skills, character etc. The production technology was found to be irrelevant for financing decision of start-ups.

Gartner *et al.*(2012) explored the financing behavior of nascent entrepreneurs and how firm and entrepreneur characteristics influence procuring of type of financing, by taking into account 1214 firms from PSED II dataset(2005-2008) . Under it, financing sources were categorized as personal and external sources. The binary logistic regression, OLS regression model were used. The finding showed that Firm size, incorporation were positively related to use higher amount of personal and external financing while the growth intention was negatively related to use of external financing. Industry variable was not significant for both type of financing and amount acquired. Financial projection and registered business had shown some effect on both choice and amount procured. Gender didn't significantly affected the choice and amount of financing. Race .i.e. whites (non -minorities), highly educated entrepreneurs, having prior industry experience, higher net worth, were more likely to use more external financing.

Coleman and Robb (2012) examined whether the new tech based firms financing pattern was consistent with the various financial theories of capital structure by using 4022 US firms from Kauffman Firm survey. The major source of financial capital at start-up found were

owner financing and outsider debt. The tech based firm acquired large amount of capital than non tech firms. The tech based firms particularly firms with high growth potential or higher credit quality had acquired larger amount of both external debt and external equity capital. The findings didn't supported pecking order theory.

Pahuja and Sahi (2012) examined the factors that determine the capital structure of Indian firms by using annual reports of 30 companies listed at BSE (2008-2010). The dependent variable taken was debt equity ratio, independent variable represented by size, growth, profitability, liquidity, and tangibility. The correlation and OLS regression was used. The debt equity ratio was found to be positively related with liquidity and growth, whereas negatively related with size, profitability, tangibility but the relation was statistically insignificant. The finding supported the pecking order theory of capital structure.

Harms *et al.* (2012) explored the determinants of capital structure of 81 small new venture of Austria using ordered logistic regression. The human capital was found to be playing an important role in financing decision of these firms. The industry and growth intension variable also influenced the external capital.

Cole (2013) analyzed the capital structure decision of private US firms by using the 4 surveys conducted by US Federal Reserve board during (1987-2003). The firm leverage was found to be negatively related to firm age and minority ownership whereas it was positively related to industry median leverage, legal form organization, to number of banking relationships. The primary owner characteristics were not found to be reliable factors in explaining firm leverage. The mixed support found for both pecking order and trade off theories of capital structure.

Soni and Priyan (2013) explored the funding choices of start-ups of Gujarat for financing their firm and their awareness level regarding various financing options. The findings had shown that in the initial years of venture development they utilized their personal savings and funds from their family and friend's i.e. they used bootstrapping extensively. The entrepreneurs were found to be less aware about venture capital and angel fund.

Fourati and Affes (2013) studied whether asymmetric information, asset specificity, agency problem and signaling theory predicted the capital structure of start-ups initially by using panel study of entrepreneurial dynamics (2005-2010). The study also checked applicability of pecking order theory. The logistic regression methodology was used. The finding had validated the applicability of inverted pecking order theory. The role played by information asymmetry, asset specificity, signaling theory proved that main source of finance was equity rather than debt.

Robb and Robinson (2014) explored the capital structure decisions that newly founded firms make in their initial year of operation by using 3972 firms from Kauffman Firm Survey. It has used two way classification of the funding sources i.e. in terms of their security type (debt, equity) and in terms of their source of capital (Informal, Formal source). It was found that newly founded firms rely heavily on formal debt sources such as bank financing, and less considerably on funding sources based on friends and family. And if trade credit were represented as a source of financial capital (instead of operating capital), it would be ranked third, after outside debt and owner equity. It has also considered the correlation between capital structure decisions and outcome variables like revenue, employment size, profitability, growth and where it was found that having a capital structure that is more heavily inclined towards formal credit channels results in greater probability of success. The outside debt ratio (outside debt to total capital) has shown a positive and highly significant effect on revenues, employees, and assets but a statistically insignificant positive effect on profits.

Calopa *et al.*(2014) studied the stages of development of start-up companies, their potential sources of financing used at each stage, to see whether Croatian entrepreneur has made a shift from traditional methods to newer methods of financing or not. The chi square test was used for studying the relationship between stage of development of start-up and their financing method. The result showed that 83% of start-up firms in Croatia were financed through informal sources in their initial years of operations. The stage of development of the start-up and the experience of entrepreneurs were not found to be significantly related with the financing method. Croatian start-up firms preferred the traditional and informal sources whereas only 21% had tried newer methods of financing.

Handoo and Sharma (2014) identified the determinants of the capital structure decision of 870 Indian companies (both private and govt. companies) listed on NSE (2001-2010) by using multiple regression analysis. The factors like profitability, growth, asset tangibility, size, cost of debt, tax rate and debt serving capacity had shown a significant effect on the leverage.

Kumar (2014) studied financial pattern and composition of capital structure of SME's using financial statement of companies (2010-2013). The long term fund was found to be 70 % of total fund, it get decreased remarkably over the time period although net worth had increased over time. Firms were more dependent on equity financing. The correlation between debt and equity was found to be positively related. Total debt was negatively related to total funds.

Komera and P.J (2015) examined the financing choice of public listed Indian firms during (1992-2011) and whether Indian firms follow the pecking order while making their financing decision in the presence of debt capacity concern. The findings showed that equity issues were very common and debt financing didn't dominated equity financing in magnitude among firms. The findings suggested that the pecking order theory didn't explained the firms financing behavior. Tangibility and size positively influenced, market to book ratio and profitability had negatively influenced the debt ratio.

Panda (2015) identified whether the various financial factors of capital structure of firm play a major role in accessing external capital from venture capitalists at a later stage in its life cycle. The tangible assets, profitability, size, volatility and growth opportunities affect the capital structure of firm. The framework indicated that growth firms having larger size, tangible assets, being profitable in business and with high growth opportunities would be more likely to receive venture capital at the later stage.

Menike (2015) studied the capital structure choice and financing of 300 SME in Sri Lanka and checked the applicability of pecking order and life cycle theory to the capital structure decision of SMEs by using simple and multivariate logistic regression model. The findings showed that age, size, ownership structure, information asymmetry and level of intangible activity as the important determinant of capital structure of SMEs. The industry specific effect were also found to be important in the context of SMEs capital structure. The result supported both the theories.

Chadha and Sharma (2015) studied the key determinants of capital structure of Indian manufacturing firms and to test which theory is applicable in such sector using ratio analysis and panel data approach. It was revealed that size, age, asset tangibility, growth, profitability, non-debt tax shield, business risk, uniqueness and ownership structure were found to be key determinants of capital structure. No theory trade off and pecking order explained the capital structure of Indian manufacturing sector rather it is a mix of both theories.

Coleman *et al.* (2016) explored the debt equity financing decisions of 3348 US start-up firms by using Kauffman firm survey (2004-2011). The sources of finance classified into four groups- pure equity, pure debt, debt- equity, no equity or debt financing. Debt was further classified as business debt and personal debt. The two stage bivariate Probit Tobit model, Heckman's two step estimator was used. The findings suggest that Start-ups used equity financing if they were of larger size, growth intended , home based , providing product rather than service and in fact probability increased with owners time commitment to business whereas start-ups use debt finance if firm have higher tangible assets, higher level of sales

,entrepreneurs being immigrant .Given the debt financing , large firm , higher level of assets provided product, located in small and isolated rural towns used more business debt whereas growth intended, home based firm used more personal debt. In case of personal characteristics, less educated, less experienced, older owners use more personal debt whereas higher net worth, Asians entrepreneur use more business debt.

Hechavarria *et al.* (2016) studied the relationship between start-up capital structure and time to start-up outcome by using the panel study of entrepreneurial dynamics PSED I and PSED II. It used competing risk regression and Cox regression for analysis. The start-up on an average, contain 35 % of internal funds, 24 % debt funds, and 5 % external equity funds. The results showed that, 31 % of sample start-ups quit the start-up process, 22 were still trying, and 19 % reached new firm status. The findings suggested that start-ups primarily financed with external equity had a significant positive impact on new firm emergence over the time but the percentage of ownership held by founder reduced the positive impact of external equity.

Andaleeb and Singh (2016) explored the various stages of development of start-up firms as well as their possible modes of finance. The phases of investment were- bootstrapping, family and friends, seed, growth, expansion. In bootstrapping funds provided by founder from his own savings or through loans. In second stage, funds provided by friends and family, in seed stage funds provided by professionally experienced investor like individual angel investors or by angel group. the growth stage funded though venture capital then follow on various rounds involved like series A series B and so on till the expansion stage when start-up reach a high valuation, then it might thought of going public or selling it.

Chadha and Sharma (2016) studied the trends of capital structure of 422 Indian manufacturing companies that were listed on BSE and also analyzed the impact of leverage on firm's value (2003-2013). Data taken from Prowess database. It was found that firm capital structure contain substantial amount of debt and no significant relation was found between leverage and firms value. The variables like size, age, profitability and growth were significantly positively related with firm's value.

Cotei and Farhat (2017) studied how the capital structure of new firms evolve over the time period of their development and to test the validity of financial growth cycle theory. It was found that at start-up stage, entrepreneur used insider source of finance (personal savings, family and friends, quasi equity and personal debt), at later stage external debt and equity became significantly used and the proportion of owners' equity get reduced over the time

period. The various firm and owner characteristics explained the type and magnitude of capital.

Sofat and Singh (2017) explored the important determinants of capital structure of manufacturing firms of India and tested whether the financial theories of developed economies also explained the capital structure decision of Indian firms. Multiple regression model and correlation matrix used on 100 manufacturing firms listed in BSE (2002-2012). The determinants of capital structure like asset composition, business risk and ROA were found to be positively related to debt ratio while firm size, debt service capacity was negatively related to debt ratio. The results supported that the predictions of tradeoff, pecking order, agency theory helped in explaining the financing behavior of Indian manufacturing firms.

Cole and Sokolyk (2018) examined how different forms of debt financing at firm start-up affects firm survival and their subsequent growth in terms of revenue by using data about US start-up firms from Kauffman firm survey(2005-2012). The methodology used-multivariate probit model, cox proportional hazard model, multivariate weighted least square regression. It has been found that 76% of start-up firms use some type of credit in initial year of operations, 55% of start-ups in data were financed by personal loans granted to firm owners not to business. High-quality firms more probably obtain business credit rather than personal credit. After three years of start-up formation, firms that used debt particularly business debt(in the name of firm) significantly grow faster and survive longer and also able to achieve higher level of revenues and exhibits superior performance than that of similar firm without credit financing.

Deloof and Vanacker (2018) examined the impact of credit availability (during financial crisis) on start-up financing and survival by using newly registered non-financial Belgian start-ups. Bank debt was found as the most important source of financing, even for those that were founded during the crisis period. The financial crisis had led to reduction in start-up borrowing and increased possibility of bankruptcy. These effects get stronger when these applied to start-ups that belong to bank dependent industries and that were founded by financially constrained entrepreneurs.

Mittal and Madan (2018) studied the impact of financing pattern on profitability of e-start-ups in India. Data taken under study was collected from the audited financial statements of 20 e-start-ups companies of different sectors (2012 -2016) from the capitaline database. Financing pattern here, represented by short term debt, long term debt and equity. The return on assets (ROA), return on equity (ROE) were taken as measures for profitability. The study

used the panel data regression model for analyzing effects. The findings showed that firms use mix of financial sources to finance their start-up activities. The short term debt and long term debt were negatively related to profitability however effect of long term debt was insignificant. Equity was positively related to profitability. The short term debt and equity were significant almost for both the profit measures .i.e. for ROE, ROA whereas the impact of long term debt was insignificant for ROE but it is not significant for ROA.

Ko and McKelvie (2018) investigated the impact of various signal sources particularly of founder's human capital and prominent initial investor's at different stages and on amount Of external funding acquired by new firms by using 235 new internet advertising ventures for which data combined from Crunchbase, VentureXpert, and LinkedIn etc. Ordinary least square regression, two stage least square model (2SLS) were used for analysis. Founder prior founding experience and founder's education significantly positively influence the amount of first funding stage. In later stages, education remain more important and prior experience matter less and also the signaling impact of education play greater role if firm had a less prominent investor while founder education might not be as strong if highly prominent investors were considered.

Narayan *et al.* (2019) studied about the trend and growth pattern in funding received and different stages at which they had been received by Indian start-ups. Data for the study collected from annual Indian start-up funding reports (2015-16 to 2018-19).The result had shown that in 2016-17 maximum number of deals had taken place while The maximum funding was received in 2017-18 there was negative growth appeared to be seen in 2016-17and 2018-19, the number of start-up deal increased till 2017-18 after that started declining reason being might be due to worldwide economic slowdown. Maximum deal were struck at early stage but maximum funding was received at late stage. Bridge funding found to be getting more prevalent .The chi square test was used to study the relation between stages of funding and level of development of start-up and also between financing method and professional qualification of start-up's promoters which was not found to be significant for both of them.

Shetty and Sundaram (2019) identified the various human capital factors that had influenced the acquisition of funds in first round and to see whether their effect persist for the upcoming second and third round of new ventures. The results had shown that the effect of only one factor .i.e. premier institution education persisted over the time of various rounds of funding and other factors i.e. are industry experience, prior start-up experience, founders count effect haven't persisted beyond the first round of financing.

Vaznyte and Andries (2019) examined the role of start-ups entrepreneurial strategy (particularly level of Entrepreneurial Orientation) in affecting external financing decision (specifically external debt and external equity capital) and to what extent this relationship depends on environmental and organizational factors by using tobit model on data sample of German start-ups(2014-2016). There was a positive effect found of EO on equity financing that was larger than that of debt financing, implying high entrepreneurial start-ups use higher proportion of external equity than the less entrepreneurial ones. The proportion of debt financing increase with increasing EO if only when industry level risk was high and the effect was stronger for the start-ups that yet have not reached the breakeven point whereas in spite of industry level risk, firm with high level of EO procure more equity financing and effect was more important when start-ups have not reached break even. So therefore findings suggested that start-ups' EO was related to external financing decisions and the relationship was found to be dependent on industry level risk and start-up development stage.

Rao *et al.* (2019) studied the factors that affect the capital structure decision of SMEs in India and how their relationship with leverage affect the financing decisions of SMEs by taking into account 174 non-financial firms (2006-2013). The factors like tangibility, size, age, growth, liquidity, non-debt tax shield, cash flow ratio and ROE influenced leverage of firms. Debt was found as major source of financing and short term debt was found to be more prevalent. The result supported the pecking order theory for SMEs.

Nigam *et al.* (2020) analyzed the impact of intellectual capital (human capital relational capital and structural capital) on the financing of 204 health care start-ups with new business models that had received funding during 2014-2017. The finding had revealed that all relational capital factors had the greatest impact on the financing decision whereas only one human capital factor i.e. academic degree from prestigious education institute both in India and abroad had shown a significantly positive impact on probability of obtaining higher amount of venture Capital and structural variables haven't impacted significantly.

Hanh (2020) compared the fundraising potential and funding amount of start-ups financing in Vietnam by using 338 start-ups for which data taken from CrunchBase database (2010 – 2018). Probit regression and linear regression was used. The study had analyzed the impact of two factors, which were industry and age of start-ups on capital mobilization. The results indicated that the start-ups in the fintech industry and e-commerce industry had a positive impacts on the potential of start-ups to raise funds compared to start-ups in other industries. Along with it service technology had also attracted more investment fund. In addition, the

number of years of operation of start-ups had a positive impact on both the potential and capacity of capital mobilization of start-ups in Vietnam**.**

Loan *et al.* (2020) explored the determinants of initial capital structure decision of business start-ups in Vietnam using a survey on owner's characteristics and the financial reports. Correlation and OLS regression with fixed effect model were used.The major determinants found under it were: start-up size, profitability, work experience, growth orientation and age whereas the asset structure, type of organisation, owners age, gender and education level haven't seen to be significantly influencing capital structure choice.

3. Research Gaps Identified

On the basis of review of literature, the important gaps have been found.Earlier the studies conducted were related to financing choice decision of large established firms, or small businesses, there is limited study done yet on financing of start-ups . Among the few studies conducted in start-up context, most of them belongs to developed countries like USA, Australia etc. So, there is a need to gain more understanding about financing of start-up firms in developing country like India. . To understand the financing decision of start-up firms, it will be important to know what debt equity financing mix used by start-ups to finance their activities. The different sources like debt, equity or mix of the two can be used during its different stages of growth and development. The financing decision can be analyzed by studying the important determinants that influence capital structure of start-up firms. Therefore the present study will be an attempt to study the determinants of capital structure of Indian start-ups.

Also, to gain better the understanding, there is a need to know the start-up entrepreneur's preference towards the various financing sources and their reasons behind such decision. The various studies had shown that external financing had played an important role in financing the start-up firms, there is a need to study whether it is so in Indian context also. There are various capital structure theories exists in literature, as like trade off theory, pecking order theory that had explained the financing decisions of firms. Their propositions applicability need to be verified in the Indian context. And also looking at the start-up importance in economic growth of a nation, there is a need to conduct a study on start-ups financing behaviour.

At the same time it is also important to examine the impact of capital structure choice on the performance of start-ups as well.

4. Problem Statement

In Indian context, the studies related to analysing the determinants of capital structure have been conducted regarding firms listed on BSE, NSE, private firms and SMEs. Now there is a need to explore the factors affecting the capital structure of start-up firms during the early stage of financing. These factors may be firm related like firm size, age, asset composition, type of business etc. Among these factors, firm size, asset structure, growth and profitability had shown a relationship with leverage in matured firms (Rajan and Zingales (1995), Chakraborty (2010), Handoo and Sharma (2014). In case of newly founded firms, existing studies had shown that firm size, asset structure (Cassar (2004) Sanyal and Mann (2010), Coleman et al (2016)) had an influence on leverage , external debt and on long term leverage ,bank debt (Cassar (2004). However, Ortqvist et al (2006) had shown asset structure as the only variable having significant effect on both short term and long term debt. The growth and profitability factors affect the capital structure decision of start-ups had been shown by few studies (Gartner (2012), Coleman 2016). Along with firm characteristics, ownership characteristics represents the human capital of a firm that also give some additional predictive information for explaining the capital structure decision of newly established firms (Loan et al (2020)). The owner characteristics like education level , age, industry experience (Sanyal and Mann 2010), prior work experience (Gartner et al (2012), Coleman et al (2016) had shown an impact on level of debt used by firms, whereas according to Cassar (2004) the owners characteristics were not found to be having a significant influence on start-up financing. Therefore, the earlier studies had shown mixed results for the entrepreneur characteristics being having an influence on the capital structure decision of start-up firms. So for newly founded firms, firm characteristics and entrepreneur characteristics have been used in the existing studies to explain the factors affecting the capital structure choice of firms in their initial years of operations. The research studies conducted on this issue is very scarce, and they were mainly focussed to developed countries. So there is a need felt to conduct a study on factors affecting capital structure decision of start-ups in developing country like India. Along with it, the perception of start-up entrepreneurs, regarding the various sources of finance that are utilized by them to finance their start-up at the early phase of their development, also need to be studied.

5. Objectives of the study

The broad objective of the study is to explore the determinants of the capital structure decision of start-ups, the sub objectives are;

i. To know the perception of start-up entrepreneurs regarding the various financing sources used by start-ups;
ii. To know the composition and the financing pattern of start-up firms;
iii. To study the firm-level characteristics affecting the capital structure of start-up firms;
iv. To study the start-up entrepreneurs characteristics influencing the capital structure of start-up firms; and
v. To examine the effect of capital structure choice on the performance of start-up firms.

6. Hypothesis Formulation

On the basis of existing studies, the hypothesis for the factors affecting the capital structure of start-up firms can be formulated as:

H_{01}: Firm size has no impact on leverage of start-up firms.

$H_1 1$: Firm size has an impact on leverage of start-up firms

$H_0 2$: Asset structure has no impact on leverage of start-up firms

$H_1 2$: Asset structure has an impact on leverage of start-up firms.

$H_0 3$: Growth prospect has no impact on leverage of start-up firms

$H_1 3$: Growth prospects has an impact on leverage of start-up firms.

$H_0 4$: Profitability has no impact on leverage of start-up firms.

$H_1 4$: Profitability has an impact on leverage of start-up firms.

$H_0 5$: The start-up entrepreneur's characteristics will not significantly influence the capital structure of start-ups.

$H_1 5$: The start-up entrepreneur's characteristics will significantly influence the capital structure of start-ups.

$H_0 6$: There is no significant relationship between leverage and performance of start-ups.

$H_1 6$: There is a significant relationship between leverage and performance of start-ups.

7. Research Methodology

7.1 Research design: Research design is a framework or a well organised plan used by a researcher. The present study will be of exploratory-cum empirical in nature.

7.2 Sample unit: The sample unit would be chosen from the start-ups located in Delhi-NCR region, recognised by DIPP (now DPIIT) as start-ups and that were founded in between the financial years 2013-2015(interpreted as from 1 April 2013 to 31st March 2015)

7.3 Sample size: The target population for the study will be Delhi-NCR region. It is not possible to study each unit of population. Therefore, the sample size is supposed to be of 50 start-ups but it can increase or decrease according to the requirement of the study.

7.4 Sampling method: For selecting the sample for the study, the Non-probability, Purposive and convenience sampling method will be used.

7.5 Type of data: Both primary and secondary data will be used for this study. The secondary data will contain the data from financial reports of start-up firms, firm's websites, journals, newspaper articles etc. The financial reports can be retrieved from www.mca.gov.in or tofler.in websites etc.

The primary data will be collected through structured questionnaire survey. The founder's related data may be collected by using LinkedIn profiles also. The tentative period of study shall be taken from 2015-16 to 2019- 2020, which will represent the initial time period of start-up firms and is considered sufficient to draw conclusions for the study under consideration.

Statistical tools: For the purpose of analysis various suitable statistical tools like financial ratios, correlation and regression analysis, OLS regression etc. will be used as per need of the study.

8. Significance of the Study

The study conducted has an importance for entrepreneurs, fund providers and government. Start-ups play an important role for the economic growth and development of a nation. Financing decision taken has an impact on start-up current as well as on its subsequent performance. Due to lack of availability of finance, start-ups may even lead to its failure. So financing decision need to be taken very wisely by the entrepreneurs. This study conducted regarding determinants of capital structure choice of start-up firms that will help the future entrepreneurs in taking decision wisely by considering the various factors that might affect their financing decision. It will help potential fund providers to understand what are the reasons behind the existing capital structure of start-ups that will help them to take decision regarding investing their fund more strategically. The govt. also play an important role towards providing finance at more favourable terms to start-ups to help them survive in their initial years of operations.

Indian government has promoted entrepreneurship and promoted bank financing through various schemes to provide access to capital that help start-ups so that they can grow and expand easily and contributes towards society and nation.

9. Organization of the Study

The tentative chapter scheme of the study will be organized as follows:

Chapter I: Introduction: the first chapter will include the introductory part of the study

Chapter II: Review of Literature: this chapter will contain the review of literature undertaken for the purpose of the study

Chapter III: Research Methodology: this chapter will include the methodology used for the purpose of the study. It will contain the research hypothesis, data collection method, sample size selection and tools that will be used for analysing the data of the study.

Chapter IV: Analysis and Interpretation of the data: this chapter will be including the interpretation of the statistical data undertaken under the study.

Chapter V: Findings and conclusion: this chapter will include the research findings, suggestions, conclusion of study and future research directions.

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